CLAIMS:

1. A stent comprising:

a plurality of serpentine bands;

adjacent serpentine bands being connected to one another by at least one permanent connector strut;

adjacent serpentine bands being connected to one another by at least one disengagable connector strut which may be disengaged by electrolytic detachment.

2. The stent of claim 1, wherein said at least one disengagable connector strut is made from a material having a higher corrosion potential than a material used to form said serpentine bands.

3. The stent of claim 1, further comprising an electrical lead that is electrically coupled to the stent.

4. The stent of claim 3, wherein said electrical lead is electrically coupled to said at least one disengagable connector strut.

5. The stent of claim 4, further comprising a plurality of disengagable connector struts, wherein said electrical lead is coupled to all of the disengagable connector struts.

6. The stent of claim 4, further comprising a plurality of disengagable connector struts and a second electrical lead, wherein each electrical lead connects to at least one disengagable connector strut.

7. The stent of claim 1, wherein the stent is at least partially self-expanding.

8. The stent of claim 7, wherein the stent self-expands to an intermediate deployment diameter, the stent being restrained from further expansion by said at least one disengagable connector strut.

9. The stent of claim 8, wherein the stent self-expands to a full deployment diameter upon disengagement of said at least one disengagable connector strut.

10. The stent of claim 1, wherein said at least one disengagable connector strut further comprises a necked portion.

11. The stent of claim 10, wherein said disengagement occurs at said necked portion.

12. The stent of claim 10, wherein said at least one disengagable connector strut is connected to a serpentine band at a necked portion.

13. The stent of claim 1, wherein upon disengagement of said at least one disengagable connector strut, said at least one disengagable connector strut no longer transmits forces between said adjacent serpentine bands.

14. The stent of claim 1, wherein said serpentine bands further comprise a plurality of alternating peaks and valleys; wherein said at least one permanent connector strut connects at a first end to a valley of one serpentine band and connects at a second end to a peak of an adjacent serpentine band; and wherein said at least one disengagable connector strut connects at a first end to a valley of one serpentine band and connects at a second end to a peak of an adjacent serpentine band.

15. A stent comprising:

a cylindrical framework having a diameter, a first end and a second end, the framework having a plurality of cells; and

a wire having a first end and a second end, the wire woven between at least two cells, the first end of the wire extending beyond an end of the framework, wherein the diameter of the cylindrical framework my be controlled by adjusting the tension of the wire.

16. The stent of claim 15, wherein said tension may be controlled by applying a force to said first end of the wire.

17. The stent of claim 16, wherein the stent is self expanding.

18. The stent of claim 17, wherein cylindrical framework may expand when the tensile force on the wire is reduced.

19. The stent of claim 18, wherein the cylindrical framework may expand to a full deployment diameter upon removal of said force applied to said first end of the wire.

20. The stent of claim 15, wherein the wire comprises a shape memory material.

21. The stent of claim 15, wherein the wire frictionally engages said framework.

22. The stent of claim 21, wherein said wire releases said framework upon a full expansion of said framework.

23. The stent of claim 15, wherein the first end and the second end of the wire extend beyond an end of the framework.

24. The stent of claim 15, wherein said wire second end is coupled to a portion of said framework or to another portion of said wire.

25. The stent of claim 24, wherein said wire second end disengages upon application of a predetermined tensile force.

26. The stent of claim 24, wherein said wire second end disengages upon application of an impulse force.

27. The stent of claim 24, wherein said wire second end disengages by electrolytic detachment.

28. A medical device comprising:

a delivery catheter;

an implantable medical device arranged about the catheter;

an inner sheath capable of expanding to a first maximum diameter, the inner sheath arranged about at least a portion of the implantable medical device; and

an outer sheath having a maximum diameter, the outer sheath arranged about least a portion of the implantable medical device and about least a portion of the inner sheath;

the first maximum diameter of the inner sheath being greater than the maximum diameter of the outer sheath.

29. The medical device of claim 28, wherein the outer sheath constrains the implantable medical device to a delivery diameter.

30. The medical device of claim 28, wherein the inner sheath constrains the implantable medical device to an intermediate deployment diameter

31. The medical device of claim 28, further comprising a lubricious coating between the inner sheath and the outer sheath.

32. The medical device of claim 28, further comprising a lubricious coating between the inner sheath and the implantable medical device.

33. The medical device of claim 28, wherein the implantable medical device is a self-expanding stent.

34. The medical device of claim 28, wherein the inner sheath is coupled to the outer sheath.

35. A stent comprising:

a cylindrical metal framework having a plurality of cells, said framework comprising a first serpentine band, a second serpentine band, a permanent connector strut connecting the first serpentine to the second serpentine band, and a disengagable

connector strut connecting the first serpentine to the second serpentine band; wherein the number of cells decreases upon disengagement of said disengagable connector strut; and wherein the mass of the metal framework decreases upon disengagement of said disengagable connector strut.

36. The stent of claim 35, wherein cells on either side of said disengagable connector strut combine to form a single cell upon disengagement of said disengagable connector strut.

37. The stent of claim 36, wherein a portion of each cell is defined by a portion of a permanent connector strut after disengagement of said disengagable connector strut.

38. The stent of claim 35, wherein the stent is at least partially self-expanding.

39. A stent comprising:

a proximal serpentine band;

a distal serpentine band;

at least one permanent connector strut; and

at least one cantilevered support member having a first end coupled to the proximal serpentine band and a free second end, wherein said cantilevered support member is arranged to transmit a diameter-reducing force to the distal serpentine band.

40. The stent of claim 39, wherein the cantilevered support member first end is coupled to the proximal serpentine band with a rigid connection.

41. The stent of claim 39, wherein the cantilevered support member overlaps the distal serpentine band.

42. The stent of claim 39, wherein the proximal serpentine band and the distal serpentine band comprise a plurality of alternating peaks and valleys, and said cantilevered support member first end is coupled to a valley of the proximal serpentine band.

43. The stent of claim 42, wherein the cantilevered support member overlaps a peak of the distal serpentine band.

44. The stent of claim 39, wherein the stent is at least partially self-expanding.

45. The stent of claim 39, wherein said cantilevered support member further comprises a curved end portion.

46. The stent of claim 45, wherein the cantilevered support member prevents the distal serpentine band from translocating more than a predetermined distance away from

the proximal serpentine band.

47. A medical device delivery system comprising:

a stent; and

a delivery shaft;

wherein the stent is attached to the delivery shaft via an electrolytically detachable member.

48. The delivery system of claim 47, wherein the stent comprises a backbone and a plurality of ribs attached to the backbone.

49. The delivery system of claim 48, wherein the backbone is attached to the delivery shaft via the electrolytically detachable member.

50. The delivery system of claim 48, wherein the ribs comprise a shape memory material.

51. The delivery system of claim 50, wherein the backbone comprises a shape memory material.

52. A stent comprising:

a first serpentine band;

a second serpentine band;

at least one permanent connector strut connecting the first serpentine band to the second serpentine band; and

at least one floating connector strut connecting the first serpentine band to the second serpentine band;

wherein the floating connector strut includes an interior loop, and a portion of said first serpentine band is contained within the interior loop.

53. The stent of claim 52, wherein a portion of said second serpentine band is contained within the interior loop.

54. The stent of claim 52, wherein the floating connector strut further comprises a second interior loop, and a portion of said second serpentine band is contained within the second interior loop.